JORNADA
L’assegurament de la qualitat dels ensenyaments
19 desembre 2011

Acreditació i Qualitat a les Enginyeries.

Contribution by
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(European Network for the Accreditation of Engineering Education)
EUR-ACE®: the European Quality label for Engineering

is run by ENAEE, a network of 19 Associations (Eng. Education Societies, Engineering Accreditation Agencies, Engineers’ Professional Associations...
Engineering is a “global” profession: hence, trans-national recognition is essential.

In 1989, eight National Engineers’ professional organizations started the so-called

**Washington Accord**

that, as of 2011, has 14 signatories and 6 “provisional members”

*In the Washington Accord,*

“qualifications accredited or recognised by other signatories are recognised by each signatory as being substantially equivalent to accredited or recognised qualifications within its own jurisdiction”
No similar initiative in Europe up to 2004. European engineering graduates encounter significant difficulties in recognition of academic and professional qualifications, and consequently in trans-national mobility.

Lack of a European accreditation system of engineering education accepted on the continental scale.

To fill this lack was (and is) the basic motivation of the whole EUR-ACE exercise, started in 2004: in these seven years significant results have been achieved (as summarized in the following).
The EUR-ACE accreditation system was envisaged by the EU-supported EUR-ACE project (2004-06) to make up for the lack of a European accreditation system of engineering education accepted on the continental scale.

To implement the EUR-ACE system, the European Network for Accreditation of Engineering Education (ENAAE) [www.enaee.eu](http://www.enaee.eu) was founded in February 2006 by 14 concerned Associations (now 19).
ENAEE/EUR-ACE adopt the following definition:

**Accreditation of an [Engineering] Education Programme**

is the result of a process to ensure **suitability of programme** as entry route to the [engineering] profession, by means of

- Periodic assessment against accepted standards
- Peer review of written and oral information by trained and independent panels including academics and professionals

The “quality” and “relevance” of accredited degrees is guaranteed at all “levels”, but accreditation refers to education only, not whole formation

**EUR-ACE** is “programme accreditation”; to qualify it better, it can be called “pre-professional accreditation”
Two main outcomes of the EUR-ACE project:

a) a synthesis of existing national Standards:

**EUR-ACE Framework Standards for the Accreditation of Engineering Programmes**

b) a proposal for the Organization and Management of the EUR-ACE Accreditation System

The EUR-ACE Standards and all other relevant documents are available on the site of ENAEE:

[www.enaee.eu](http://www.enaee.eu) or [www.eur-ace.eu](http://www.eur-ace.eu)
The EUR-ACE Framework Standards, that were compiled as a “synthesis” between existing national Standards, are **outcome-based**, i.e. specify the **Programme** (or Learning) **Outcomes** to be satisfied. They:

- Are valid for all branches of engineering and all profiles
- Distinguish between **First** and **Second Cycle** programmes, as defined in the European Qualification Frameworks
- Are applicable also to “**integrated programmes**”, i.e. programmes that lead directly to a Second Cycle degree
- **Describe the abilities that the graduates must achieve but not how they should be taught**
- Can accommodate national differences of educational and accreditation practice
The EUR-ACE® Framework Standards require the assessment of a programme for Quality Assurance to consider not only the Programme Outcomes, but also all the following items:

- 1. Needs, Objectives and Outcomes;
- 2. Educational Process;
- 3. Resources and Partnerships;
- 4. Assessment of the Educational Process;
- 5. Management System

and for each item specify the criteria to be assessed.

How does the **EUR-ACE® accreditation system** work?

- **National (or Regional) Agencies accredit** EE programmes;
- If the Agency satisfies appropriate Quality requirements, and the accredited programmes satisfy the **EUR-ACE Framework Standards**, ENAEE authorizes the Agency to “add” the **EUR-ACE® quality label** to the national accreditation, thus giving it an international value.
- The **EUR-ACE® label** distinguishes between **FIRST CYCLE** and **SECOND CYCLE DEGREES**, in accord with the European Qualification Frameworks.
- “Integrated (long) Programmes” can be awarded the **SC** label.

The last points underline the consistency of EUR-ACE with the “Bologna” approach, and allow to define it “European Accreditation ...”
Sample EUR-ACE® Label Certificate with new (2011) logo:
the relevant programme is designated as a FIRST [or SECOND] CYCLE EUROPEAN-ACCREDITED ENGINEERING programme;
the respective graduates can call themselves either EUR-ACE® Bachelor or EUR-ACE® Master.

Official name of the education programme in original language (and in English) provided by Name of Educational Institution, and Faculty or Department, (if applicable) accredited by (Accrediting Agency) on (dd month yyyy) until (dd month yyyy)
satisfies the outcomes of Second Cycle programmes specified in the EUR-ACE Framework Standards for the Accreditation of Engineering Programmes, and therefore for the above period of accreditation is designated as a SECOND CYCLE EUROPEAN-ACCREDITED ENGINEERING PROGRAMME

For the European Network for Accreditation of Engineering Education (ENAAE)

The President
Prof. Ing. Giovanni Basari, Sc.D.

The xxx
xxx
Signature

Brussels, xx Month 201x
xx, xx Month 200x
Six Agencies [the relevant partners of the EUR-ACE project (2004/06)], were authorized to deliver the EUR-ACE Label (EUR-ACE-authorized) in November 2006 and confirmed in October 2008:

- **ASIIN** (Accreditation Agency for Study Programs in Engineering, Informatics, Natural Sciences and Mathematics), Germany
- **CTI** (Commission des Titres d’ Ingénieur), France
- **Engineers Ireland**
- **RAEE** (Russian Association for Engineering Education)
- **Engineering Council**, United Kingdom
- **Ordem dos Engenheiros**, Portugal

A seventh Agency was authorized in January 2009:

- **MÜDEK** (Association for Evaluation and Accreditation of Engineering Programs), Turkey
Awarded EUR-ACE labels as of December 2010:

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Overall total: 734

As of November 2011, overall total > 900
As of November 2011, a number of applications from other Agencies that want to be EUR-ACE-authorized have been received and are being considered:

- **NVAO** (Accreditation Organisation of Netherlands and Flanders)
- **ARACIS**, QA Agency, Romania (*)
- **SKVC**, QA Agency, Lithuania (*)
- **OAQ**, QA Agency, Switzerland
- **KAUT**, Accreditation Committee for Technical HE Institutions, Poland
- **QUACING**, Agency for QA & Accr.Enggr.Programmes, Italy (*), “Candidate Agency” (has overcome a preliminary check)

Moreover:
- **CTI** has agreed with **AEQES** (French-Belgian HE QA Agency) to accredit and award the EUR-ACE label in French-language Belgian HEIs;
- **FINHEEC** (Finnish QA Agency) is preparing the application;
- other contacts are under development, e.g. in **SPAIN**.
As noted, the EUR-ACE labels do not distinguish between engineering “branches” nor “profiles”. However, distinctions are made in accrediting a programme, e.g., in verifying the graduates’ “knowledge and understanding of their branch of engineering”, as required by the EUR-ACE Framework Standards.

Consequently, there is an open discussion within ENAEE whether

a) to stick to the undifferentiated EUR-ACE labels (FC and SC) based on the EUR-ACE Framework Standards, and leave the differentiation among branches to each EUR-ACE-authorized Agency, in accord to its own practice, or

b) to introduce differentiated labels that could exploit also the branch-level descriptors developed by relevant Technical Associations, like e.g. EUCEET in the Civil Engineering field and the European Federation of Chemical Engineering.
It also worth mentioning the ambitious OECD initiative AHELO, aiming at a worldwide Assessment of Higher Education Learning Outcomes now in the feasibility stage, with special focus on Engineering and Economics. A pilot initiative supported by AHELO led to the AHELO-Tuning Conceptual Framework of Expected/Desired Learning Outcomes in Engineering finalized in May 2009 together with the analogous Framework for Economics.

The Engineering Framework is essentially a merging of the EUR-ACE Programme Outcomes for First Cycle Degrees and the ABET “Criteria for accrediting engineering programs” (and is compatible with other relevant Standards).
Summing up, ENAEE is creating a two-tier system of European-accredited engineering programmes. Variants to accommodate specific national needs and/or additional qualifications (e.g. for specialized degrees or specific profiles and/or branches) are not excluded.

Indeed, the EUR-ACE label is an “addition” to a national accreditation, and can be regarded as a quality guarantee of an accepted common basis to programmes providing an entry route to the engineering profession.

The experience of national accreditation bodies, old-established in several European countries, is fully exploited.

This approach and the essential distinction between FCD and SCD make the EUR-ACE system at the same time flexible and simple and should allow it to be spread world-wide.

Third Cycle (Doctoral) and Continuing Education are not (yet) considered.
Any Higher Education Institution throughout Europe and the world that want the EUR-ACE FC or SC Label for one or more of their engineering programmes, even if no EUR-ACE-authorized Agency exists in their country, can apply through one of the EUR-ACE Agencies, following its procedure.

Alternatively, they can contact directly the ENAEE Secretariat, that will direct them to the most convenient Agency.

For up-to-date information, application forms, etc., visit www.enaee.eu or www.eur-ace.eu

or contact

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